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Feinstein

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(54) **DEVICES, SYSTEMS, AND METHODS FOR REPAIR OF VASCULAR DEFECTS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 172 days.

This patent is subject to a terminal disclaimer.

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(Continued)

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(57) **ABSTRACT**

A balloon-expandable shunt is disclosed for shunting a vessel which has a graft with two ends and at least one expandable support element supporting the graft from within along a length at or near at least one of its ends. The shunt is bifurcated at an aperture that leads to a side-channel and which has a closed configuration and an open configuration such that when the aperture is in the closed configuration it defines a clot-resistant inner graft surface and when the aperture is in the open configuration it is configured to provide access to the shunt for a balloon that actuates the expandable support element. A balloon configured for actuating the shunt is also disclosed. A kit has a bifurcated graft with at least one expandable support element and a balloon for actuating the at least one expandable support element.

21 Claims, 8 Drawing Sheets